



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

| APPLICATION NO.   | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO.       | CONFIRMATION NO. |
|---|-------------|----------------------|---------------------------|------------------|
| 10/713,777  | 11/13/2003  | Shigeru Nakagawa     | 089992                    | 8760             |
| 20350   | 7590        | 11/16/2005           |                           |                  |
| TOWNSEND AND TOWNSEND AND CREW, LLP<br>TWO EMBARCADERO CENTER<br>EIGHTH FLOOR<br>SAN FRANCISCO, CA 94111-3834 |             |                      | EXAMINER<br>DIACOU, ARI M |                  |
|   |             |                      | ART UNIT<br>3663          | PAPER NUMBER     |

DATE MAILED: 11/16/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

|                              |                                      |  |  |
|------------------------------|--------------------------------------|--|--|
| <b>Office Action Summary</b> | <b>Application No.</b><br>10/713,777 | <b>Applicant(s)</b><br>NAKAGAWA ET AL. |  |
|                              | <b>Examiner</b><br>Ari M. Diacou     | <b>Art Unit</b><br>3663                |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 27 October 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1,4-7 and 12-14 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,4-7 and 11-14 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948)                | Paper No(s)/Mail Date. _____  |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>2003 and 2005</u> .   | 6) <input type="checkbox"/> Other: _____                                    |

## DETAILED ACTION

### *Election/Restrictions*

1. Applicant's election without traverse of species D pointing to claims 1, 4-7, and 12-14 in the reply filed on 10-27-2005 is acknowledged.
2. Applicant's cancellation of claims 2-3, 15-17, and 8-11 in the reply filed on 10-27-2005 is acknowledged.

### *Double Patenting*

3. The claims of the instant application conflict with the claims of copending application USPAP 2004/0081389 (which has been issued a notice of allowance) as tabulated below.

| Instant application | USPAP 2004/0081389 |
|---------------------|--------------------|
| Claim 4             | Claim 1            |
| Claim 5             | Claim 2            |
| Claim 6             | Claim 3            |
| Claim 7             | Claim 4            |
| Claim 12            | Claim 10           |
| Claim 13            | Claim 11           |

37 CFR 1.78(b) provides that when two or more applications filed by the same applicant contain conflicting claims, elimination of such claims from all but one application may be required in the absence of good and sufficient reason for their retention during pendency in more than one application. Applicant is required to either cancel the conflicting claims from all but one application or maintain a clear line of demarcation between the applications. See MPEP § 822.

Art Unit: 3663

4. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

5. The claims of the instant application are merely broader than the conflicting claims, in that an 'optical module' is broader than an 'optical switch'.

### ***Claim Rejections - 35 USC § 102***

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Naniwae (USP No. 2002/0159705).

- Regarding claim 1, Naniwae discloses an optical module arranged in an optical transmission path, comprising:
  - an optical amplifying unit configured with a semiconductor, wherein the optical amplifying unit amplifies light input from the optical transmission path; and [Fig. 7, #32a]
  - an optical element configured with a semiconductor, wherein the optical element propagates the light amplified by the optical amplifying unit to the optical transmission path. [Fig. 7, #32b]

8. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Li (USPAP No. 2002/0076133).

- Regarding claim 1, Li discloses an optical module arranged in an optical transmission path, comprising:
  - an optical amplifying unit configured with a semiconductor [Fig. 10, #30],
  - wherein the optical amplifying unit amplifies light input from the optical transmission path; [Fig. 10, #12] [¶ 0033]
  - and an optical element configured with a semiconductor, [Fig. 10, #38]
  - wherein the optical element propagates the light amplified by the optical amplifying unit to the optical transmission path. [¶ 0047-0051]

Art Unit: 3663

9. While patent drawings are not drawn to scale, relationships clearly shown in the drawings of a reference patent cannot be disregarded in determining the patentability of claims. See In re Mraz, 59 CCPA 866, 455 F.2d 1069, 173 USPQ 25 (1972).

***Claim Rejections - 35 USC § 103***

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

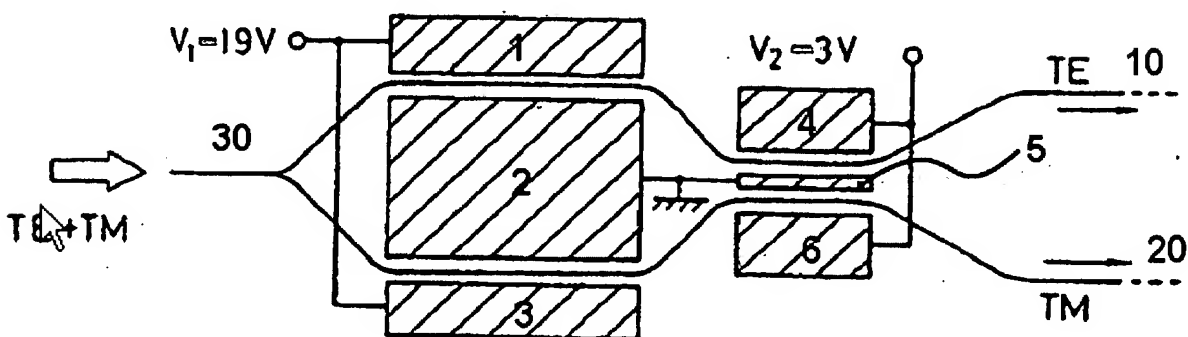
1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

12. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to

Art Unit: 3663

consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

13. This figure is a recitation of Figure 2 in the European application EP 0 445 347 A2, cited by the applicant, edited to include reference numerals.



14. Claims 4-7 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over, Li (USPAP 2002/0076133) in view of Mak et al. (EP 0445347 A2). Li discloses the invention with all of the limitations of claim 1. Mak discloses:

- a. Regarding claim 4, Mak discloses the optical module according to claim 1, wherein the optical element comprises:
  - a first optical waveguide through which light from the optical amplifying unit propagates; [Fig. 2, #10]
  - a second optical waveguide through which light propagates, wherein the second optical waveguide optically crosses the first optical waveguide to form a crossing portion; [Fig. 2, #20]

Art Unit: 3663

- a first lead electrode arranged along the first optical waveguide and the second optical waveguide; [Fig. 2, #5]
  - a pair of first control electrodes arranged along the first optical waveguide so as to face each other, with the crossing portion therebetween, to which a control voltage controlling a crossing state is applied via the first lead electrode; [Fig. 2, #4 & #6]
  - a second lead electrode arranged so as to face the first lead electrode; and [Fig. 2, #2]
  - a pair of second control electrodes arranged along the second optical waveguide so as to face each other, with the crossing portion therebetween, to which the control voltage is applied via the second lead electrode. [Fig. 2, #1 & #3]
- b. Regarding claim 5, Mak discloses the optical module according to claim 4, wherein the first lead electrode and the second lead electrode are arranged so as to face each other, with the first optical waveguide and the second optical waveguide arranged therebetween. [Fig. 2, #5]
- c. Regarding claim 6, Mak discloses the optical module according to claim 5, wherein the first lead electrode and the second lead electrode are arranged substantially parallel with each other. [Fig. 2]
- d. Regarding claim 7, Mak discloses the optical module according to claim 4, wherein the first optical waveguide and the second optical waveguide are arranged in a physically solid crossing state. [Fig. 1]



Art Unit: 3663

e. Regarding claim 12, Mak discloses the optical module according to claim 4, wherein each of the first control electrodes and the second control electrodes have a control electrode piece divided into a plurality of parts in the longitudinal direction. [Fig. 2, #2 & #5]

but fails to disclose an optical amplifier producing amplified TE and TM signals. Li teaches a semiconductor optical amplifier, as well as the desirability and practice of using that optical amplifier as part of a signal-switching apparatus [¶ 0047-0051]. Therefore, it would have been obvious to one skilled in the art (e.g. an optical engineer) at the time the invention was made, to create an optical module that switched amplified input light, for the advantage of preserving or increasing the signal to noise ratio.

### ***Conclusion***

15. The references made herein are done so for the convenience of the applicant. They are in no way intended to be limiting. The prior art should be considered in its entirety.

16. The prior art which is cited but not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ari M. Diacou whose telephone number is (571) 272-5591. The examiner can normally be reached on Monday - Friday, 8:30 am - 5:00 pm.

Art Unit: 3663

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jack Keith can be reached on (571) 272-6878. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

AMD 11/10/2005

  
JACK KEITH  
SUPERVISORY PATENT EXAMINER